

**Abstract**

A system includes a device management computer, a  
data concentrator computer for communicating with the  
device management computer, a gateway device for  
5 communicating with the data concentrator computer, and  
a plurality of mobile data acquisition devices. Each  
of the plurality of mobile data acquisition devices  
communicates with the gateway device. The gateway  
device performs pre-processing functions on data  
10 collected by the plurality of mobile data acquisition  
devices prior to transferring the data to the data  
concentrator computer.